

EXECUTIVE SUMMARY

For all its enormous range of space, climate, and physical appearance, and for all the internal squabbles, contentions, and strivings, Texas has a tight cohesiveness perhaps stronger than any other section of America. Rich, poor, Panhandle, Gulf, city, country, Texas is the obsession, the proper study, and the passionate possession of all Texans.

- John Steinbeck, *Travels With Charlie: In Search of America*

On behalf of the State of Texas, the Texas General Land Office (Land Office) is applying for the National Disaster Resiliency Competition being presented by the United States Department of Housing and Urban Development. With the goal of developing ways to make communities across the State more resilient, the Land Office drew upon its vast expertise in disaster recovery while conducting a tremendous amount of outreach in order to get input from as many stakeholders as possible. These stakeholders include impacted counties, other state agencies, institutions of higher learning, and other civil society organizations.

Texas has experienced exponential growth in population over the last several decades. The resulting increase in demand for resources strains existing capacity, and creates new challenges in addressing the cycles of drought, hurricanes, wildfire and other traumatic events which Texans have weathered for centuries. The application presents target areas in three counties that experienced three different types of disaster between 2011 and 2013: Bastrop County's wildfire, Travis County's flood, and McLennan County's explosion. By identifying the most impacted and distressed features of these counties and recognizing their unmet need, patterns emerge which also apply to the 155 other Texas counties with declared disasters in this time period as well as the State as a whole.

To best approach these patterns of need, the Land Office has developed a direction-setting framework by harnessing the diverse resources of the State in order to provide a cross-disciplinary approach to disaster recovery. This ranges from developing objectives for addressing the needs of vulnerable populations to identifying ways to harden infrastructure. The Land Office is focused on how to make communities more resilient through a multidisciplinary program to conserve, plan, assist, and develop the communities and resources of Texas and envision a prosperous and more resilient future.

Exhibit B – Threshold Requirements

T1: Eligible Applicant

The State of Texas is the eligible applicant, and will use the Texas General Land Office (Land Office) to serve as the lead coordinator in the development of all application materials and executor of all activities for the National Disaster Resiliency Competition (NDRC). The Land Office is uniquely qualified and experienced to serve in this position due to the prior experience of serving as the Grantee for the U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant Disaster Recovery (CDBG-DR) program to address presidentially declared disasters for the previous four years. These disasters include Hurricane Rita, Hurricane Ike, Hurricane Dolly, the Bastrop Wildfires, and rest of the 2011 wildfires in Texas. The Land Office Disaster Recovery (DR) program has the expertise in managing multiple programs to include those related to housing, infrastructure, and economic development. This experience is bolstered by many certified personnel in the DR program; to include: Project Management Professionals, Professional Engineers, a Certified Emergency Manager, a Certified Floodplain Manager, and a Certified Public Accountant. The DR Program also has personnel with realty experience and the necessary institutional knowledge to expedite achieving certain outputs and outcomes by understanding the nuances of state government and the federal regulations. The aforementioned supports the Land Office's position that we can efficiently and effectively manage this resiliency project within the budget, scope, and schedule.

As the applicant, the Land Office intends to partner with a variety of organizations at the local, regional, and State levels from government, educational, advocate, volunteer, non-profit, and private sector groups. In total, the State of Texas application for the

NDRC has approximately 50 partners who have demonstrated a commitment to work collaboratively throughout the entirety of the grant.

T2: Eligible Counties

The Land Office has selected three counties to reflect a representative sample of target areas by hazard. The three hazards with the associated target areas are: Wildfire – Bastrop County Disaster Number 4029; Flooding – Travis County Disaster Number 4159; and Explosion – McLennan County (City of West) Disaster Number 4136.

Please see the Texas NDRC map of eligible counties by disaster type, which can be found in the dropbox folder. A comprehensive list of all target area submissions from across the state is found in the table at the end of this section, as well as in the dropbox folder.

T3: A, B, C: Most Impacted and Distressed Target Area

Below we will demonstrate that the area primarily benefiting from the proposed activities is most impacted and distressed related to the effects of the Qualified Disaster, and has unmet recovery needs.

Bastrop County

Most Impacted (MI): N/A - Already Determined by HUD as Most Impacted

Distressed (D): N/A - Already Determined by HUD as Most Distressed

Unmet Recovery Need (URN): Environmental Degradation, Infrastructure

Bastrop County Disaster Number 4029 was previously designated by HUD as a Most Impacted County as of May 2014 and a Most Impacted and Distressed County from the HUD Notice of 2014 National Disaster Resilience Competition (NDRC) Threshold Deficiency letter send on December 2, 2014. Nevertheless, Bastrop has identified North and South Areas within Bastrop County to address the Unmet Recovery Needs caused by the wildfire. The Bastrop

County Unmet Recovery Needs map is utilized in conjunction with the county engineer's report to show environmental damage from the qualifying disaster that has not yet been addressed and cannot be addressed with existing resources; the remaining damage and how the damage is connected with the qualifying disaster and the target area; and describes the remaining damage to the environment with a cost estimate for making repairs or restoration for more than \$400,000.

Bastrop has identified \$7,083,127.21 (\$36,763 per mile x 192.67 miles) in unmet Environmental Degradation (addressing stump grinding, watershed protection, post-fire erosions and sedimentation control) and \$4,330,450.92 (\$22,476 per mile x 192.67) in unmet Infrastructure (pavement structure repair and surfacing work) needs; for a total of \$11,413,578.13 (\$59,239 per mile x 192.67 miles) in Unmet Recovery Needs.

Bastrop County remains aware that continued intervention in removing or managing understory from pine ecosystems will result in positive financial, social, economic and environmental benefits, and will add to the County's resilience for future wildfire disasters. Such action in combination with established best management practices (BMPs) for forest health, both in the burned and non-burned areas, will provide long-term assurance against catastrophic wildfires that impact the inhabited neighborhoods that are and will be intermixed into the forest areas known as the wildland-urban interface. A very important function of the County's overall fuels management program will be providing land stewards with tools, skills assistance and technical leadership to maintain the safe environment through continued fuel management, prescribed burning, herbicide treatments and other acceptable practices.

Bastrop has more awareness of its wildfire strengths, assets, liabilities, vulnerabilities, threats, risks, being able to reassess, and adjusting in real time as a result of the 2011 fires. That is why Bastrop County identified the need to repair the environmental degradation,

infrastructure, and institutionalize BMPs for forest health to mitigate wildfires. While Bastrop is actively coordinating with local agencies and the State to improve the community's resiliency, there will be more of an emphasis on coordinating cross functionally to develop cohesive solutions and share information to execute plans effectively. Localities and the state are looking internally at personnel who have similar functions, but can be utilized to address and/or mitigate hazards. Bastrop has bolstered its ability to adapt and overcome challenges and has the foresight to develop innovative solutions that are resilient with long-term benefits. The strength of this effort will be replicated across Texas in other fire impacted areas as well as in areas that are susceptible to future fires.

Travis County

Most Impacted (MI): Housing

Distressed (D): LMI

Unmet Recovery Need (URN): Housing

This residential area is mostly comprised of single family homes with the majority of residents being in the lower to moderate income bracket (LMI). The target area experienced major flooding resulting in substantial damage to homes and other personal property. This flood was the flood of record for Onion Creek and was estimated to be a 170-year storm in the Onion Creek watershed. At the time of the Halloween Flood, the City of Austin (COA) had already purchased 323 homes in the general project area and relocated the occupants. This greatly reduced the number of homes and people at risk during the October 2013 flood. There are a number of homes (approximately 482) located in the 100 and 25 year floodplain that have yet to complete the buyout and relocation process due to limited funds. The number of homes that

remain damaged in the lower Onion Creek sub-county area exceeds the application requirement of 100 homes damaged to meet the Most Impacted 100 damaged homes.

For the Most Distressed Characteristic, this target area meets the criteria of 50% or more of the population falling within the sub-category area being less than 80% of the area median income. The estimates of the number of LMI individuals by block group based on the 2006-2010 American Community Survey (ACS) is included as supporting documentation.

Unmet Recovery Needs Emergency Data show households are still displaced. The Watershed Protection District can provide “life & safety” permits supporting the claim that there are more than 20 homes, in the lower Onion Creek area (sub-category), that remain damaged. In this area, a substantial percentage of the residents are living in either minimally repaired structures, trailers placed in their driveway, with other friends and relatives or in other temporary housing; all of which depends on the extent of the damage and repairs completed to date. The lack of affordable housing options nearby compounds the issue of finding decent, safe and sanitary housing stock within the community and outside a special flood hazard area. The COA can also provide documentation supporting repair costs, cost for home buyouts and relocation, and any extra costs if elevating the home is a feasible option. Lessons learned in Travis County will become a template for planning and response in other flood prone areas of Texas.

McLennan County (City of West)

Most Impacted (MI): Housing

Distressed (D): LMI

Unmet Recovery Need (URN): Housing, Infrastructure

For the Most Impacted Characteristic, the American Red Cross (ARC) /Coordinated Assistance Network (CAN) West Explosion: Case Management Data in CAN shows 139 single

family homes were damaged. For the Most Distressed Characteristic, the entire City of West is LMI (>50% are <80% median income or >100 Renters w/ <50% median income). Regarding the Unmet Recovery Need, the City of West had public infrastructure damage and extra repair costs to ensure resiliency of over \$400,000.00. The proposed projects are a water production facility, expansion of the fire station, and a ladder truck. The new water production facility on the north side of the City will provide the City with a new source of water in an area adversely affected by the explosion. This new water source will allow the City of West to meet its demands, including critical firefighting demands, when one of the other two existing sources is down or overtaxed by demand, as occurred during the recent explosion. Through diversity of both supplies of water and locations of service in the City of West, critical services can be fully maintained to meet future emergencies while providing a reliable and continuous source of water for the citizens of West. Allowing this project will build resilience to address both the immediate explosion needs while expanding the City's water resources.

The West Fire Department also needs to add an additional 2,000 square feet with bay doors. This expansion along with the purchase of a ladder truck will allow emergency responders to reduce the response time to emergencies thus making the City more resilient in emergency situations.

West has and will continue to utilize a range of capabilities, ideas, information, and personnel to successfully operate when elements are challenged. West has been able to address anomalous situations by retaining creative and high caliber personnel at the local government level to solve new and complex challenges. This NDRC program will assist institutionalizing resiliency when addressing hazards to identify innovative solutions that can be utilized to address and mitigate similar functions for different hazards (e.g. evacuation, mass

care, water distribution, etc.). Lessons learned the community of West could be applied in areas that experience catastrophic events and potentially the need for wildfire responses.

T4: Eligible Activity

In Phase 2, the State intends to identify NDRC eligible activities in accordance with all applicable guidelines and regulations.

T5: Resilience Incorporated

The Land Office is uniquely positioned to coordinate best practices and effectively expand them to a geographic scale that will be statewide and even serve as an example for other states to adopt. The Ideas and Concepts Section will expand on the efforts described below.

Embed lessons learned: The State of Texas has pre-existing innovations such as the statewide 2-1-1 disaster assistance support call system that the state proposes to expand into the Texas Disaster Resilience Information System that would institutionalize resilience by supporting communities to resist and rapidly recover from disasters.

Raise standards: While the momentum will begin with the State of Texas applying for NDRC funding, this project will necessitate localities (and potentially regions) identifying priorities in rank order to promote community development goals, ensure meaningful public engagement and participation, and establish and/or bolster memorandums of understanding/agreements with neighboring jurisdictions and stakeholders who are critical partners in preventing, mitigating, and recovering from disasters.

For example, counties across the state are coordinating with the Fire Adapted Communities Network to replicate an adaptive model developed by the Austin Travis County Wildfire Collaborative to develop their own context-specific County Wildfire Protection Plans.

Align resilient actions to plan updates: In partnership with the University of Texas, the Land Office will create prototype disaster resilient scenario planning models that allow cities and counties to compare alternate development scenarios based on their specific land use plans. The models consider over forty sustainability indicators. The models will be created in prototype forms that can be used not only statewide, but anywhere in the country facing similar hazards.

Relate resilient efforts to finance and economic issues: The Texas A&M Forest Service and its statewide extension services help create localized incentive programs for home and business owners to harden their structures and help to integrate ISO Insurance ratings. This reduces current and future risk, which is essential to the long-term vitality, economic well-being, and security of all communities. A community-wide approach is utilized to go beyond infrastructure solutions. The social characteristics that enable communities to quickly bounce back after a disaster will also be strategically utilized.

All of our concepts are intended to leverage preexisting plans to ensure the Texas NDRC work builds on the resilient frameworks already established in Texas, and expands them as broadly as possible beyond just our target area work.

T6: Meet a National Objective & T7: Overall Benefit

When the State of Texas implements NDRC projects, all money spent will meet at least one national objective of either urgent need, slum and blight or benefit to low to moderate population. Additionally, at least 50% of our funding will benefit LMI populations. With extensive CDBG experience within the State, these requirements are not new, and many of our current disaster recovery projects have a greater benefit to LMI populations.

T8: Establish Tie-Back

All the target areas identified within Bastrop County Disaster Number 4029, Travis County Disaster Number 4159, and McLennan County (City of West) Disaster Number 4136 were presidentially declared disasters.

In the HUD Notice of 2014 NDRC Threshold letter, HUD identified that Bastrop County is already designated by HUD as a Most Impacted and Distressed County. Nevertheless, Bastrop has identified North and South Areas within Bastrop County to address the Unmet Recovery Needs. Bastrop has identified \$7,083,127.21 (\$36,763 per mile x 192.67 miles) in unmet Environmental Degradation and \$4,330,450.92 (\$22,476 per mile x 192.67 miles) in unmet Infrastructure need, for a total of \$11,413,578.13 (\$59,239 per mile x 192.67 miles). The wildfire disaster of 2011 has shown that erosion and soil instability, as collateral damage, yields significant environmental degradation and can lead to severe costs for repair and remediation. Due to these factors, areas have been identified in the county with similar soils types and forest fuel loading present, that have future potential for such costs if left unabated. Travis County experienced severe flooding and in consequence the Onion Creek Target Area is the focus of buying-out homes, demolishing vacant homes, relocating homeowners, returning the area to a natural floodplain, or elevating the homes when feasible. These projects/solutions have and will continue to greatly reduce the number of properties and people potentially at risk during future flooding events and removing blighting influences that are creating health and safety issues.

McLennan County (City of West) had an explosion and is pursuing infrastructure projects to address the impact and mitigate cascading affects from that event. The City of West proposes to construct a new water production facility on the north side of the City. The new facility will provide the City with a new source of water in an area adversely affected by the recent

explosion. This new source will allow the City of West to meet its water demands, including critical firefighting demands, like those that occurred during the recent explosion. Through diversity of both supplies of water and locations of service in the City of West, critical services can be fully maintained to meet future emergencies while providing a reliable and continuous source of drinking water for the citizens of West.

The City is also interested in improving a fire station and procuring a ladder truck. The West Fire Department is in need of a building addition of 2,000 square feet with bay doors. There is also a need to improve the fire-fighting abilities of the fire department with a ladder truck. With the proposed improvements, the emergency responders will be able to reduce the response time to emergencies making the City more resilient to explosions and all other emergencies.

In conclusion, all proposed projects tie-back to the qualified disaster and improve the overall resiliency of the whole community and surrounding area.

Table of Counties with Identified Target Areas - Most Impacted (MI) and Distressed (D) with Unmet Recovery Need (URN)

	Disaster	Disaster Type	Eligible County	MI	D	URN	Prototype
1	1999 & 4029	Wildfires	Anderson	Infrastructure Env Deg	LMI	Env Deg	Suburban Forest (WUI)
2	1999 & 4029	Wildfires	Bastrop	Housing	LMI	Env Deg	Rural Forest Suburban Forest (WUI)
3	1999	Wildfires	Brewster	Eco Rev	Env Distress	Env Deg	Rural Dry
4	4029 & 4159	Wildfires & Severe Storms and Flooding	Caldwell	Housing	LMI	Env Deg	Rural Forest
5	1999 & 4029	Wildfires	Clay	Env Deg	Rental	Env Deg	Rural Dry

	Disaster	Disaster Type	Eligible County	MI	D	URN	Prototype
6	1999 & 4029	Wildfires	Coryell	Env Deg	Env Distress	Env Deg	Rural Dry
7	4029	Wildfires	Grimes	Housing Infrastructure Eco Rev Env Deg	Housing	Housing	Rural Forest
8	1999 & 4029	Wildfires	Hall	Infrastructure Eco Rev	Housing	Infrastructure Env Deg	Urban Suburban Dry Rural Dry
9	1999 & 4029	Wildfires	Hardin	Infrastructure	LMI	Infrastructure	Rural Forest
10	1999 & 4029	Wildfires	Hardin	Eco Rev	LMI	Eco Rev	Rural Forest
11	1999 & 4029	Wildfires	Houston	Infrastructure Env Deg	LMI	Infrastructure	Rural Forest
12	1999	Wildfires	Jasper	Eco Rev	LMI	Env Deg	Rural Forest
13	1999	Wildfires	Jeff Davis	Housing	Env Distress	Env Deg	Rural Dry
14	1999 & 4029	Wildfires	Lee	Eco Rev Env Deg	LMI	Env Deg	Rural Forest
15	1999 & 4029	Wildfires	Leon	Housing Infrastructure Env Deg	LMI Rental Env Distress Housing	Housing Infrastructure Env Deg	Rural Forest
16	1999 & 4029	Wildfires	Marion	Env Deg	LMI Rental	Env Deg	Rural Forest
17	4136	Explosion	McLennan	Housing	LMI Rental Housing	Housing	Urban
18	4136	Explosion	McLennan	Infrastructure	LMI	Infrastructure	Urban
19	1999 & 4029	Wildfires	Newton	Eco Rev	LMI	Eco Rev	Rural Forest
20	1999	Wildfires	Ochiltree	Infrastructure Eco Rev	Housing	Infrastructure Env Deg	Urban Suburban Dry Rural Dry
21	4029	Wildfires	Orange	Infrastructure	LMI	Infrastructure	Rural Forest

	Disaster	Disaster Type	Eligible County	MI	D	URN	Prototype
22	1999	Wildfires	Palo Pinto	HousingEco RevEnv Deg	Housing	Eco RevEnv Deg	Rural Dry
23	1999 & 4029	Wildfires	Panola	Env Deg	Rental	Env Deg	Rural Forest
24	4029	Wildfires	Polk	Infrastructure	Env Distress	Infrastructure	Rural Forest
25	1999	Wildfires	Potter	Infrastructure Eco Rev	Housing	Infrastructure Env Deg	Urban Suburban Dry Rural Dry
26	1999	Wildfires	Presidio	Env Deg	Eco Fragile	Env Deg	Rural Dry
27	1999	Wildfires	Sabine	Infrastructure Eco Rev	LMI	Infrastructure	Rural Forest
29	1999 & 4029	Wildfires	San Augustine	Eco Rev	LMI	Eco Rev	Suburban Forest (WUI)
30	4029	Wildfires	Shelby	Env Deg	LMI	Env Deg	Rural Forest
31	4029	Wildfires	Smith	Infrastructure	LMI	Env Deg	Suburban Forest (WUI)
32	4029 & 4159	Wildfires & Severe Storms and Flooding	Travis	Housing Infrastructure Eco Rev Env Deg	LMI	Infrastructure	Urban
35	4029	Wildfires	Upshur	Env Deg	Rental	Env Deg	Suburban Forest (WUI) Rural Forest
36	1999 & 4029	Wildfires	Walker County	Infrastructure	LMI	Infrastructure	Suburban Forest (WUI)
37	4029	Wildfires	Waller County	Housing	LMI Eco Fragile Env Distress Housing	Housing Infrastructure	Rural Forest

	Disaster	Disaster Type	Eligible County	MI	D	URN	Prototype
38	N/A	N/A	Willacy County	Housing Infrastructure Eco Rev Env Deg	LMI Rental Eco Fragile Env Distress Housing	Housing Infrastructure Eco Rev Env Deg	Rural Dry

Exhibit C - Factor 1 - Capacity

Since 2005, the State of Texas has had a staff dedicated to administering supplemental Community Development Block Grant - Disaster Recovery (CDBG-DR) funds. In that time the State of Texas has constructed over 10,000 housing units and nearly 5,000 infrastructure projects alone. The State's CDBG-DR staff is nationally recognized for its disaster recovery programs and is often called upon by HUD to provide technical assistance to other CDBG-DR grantees. In 2012, the Disaster Recovery program founded a multi-state forum to exchange ideas and allow existing programs to advise and assist other states in starting up or improving their own disaster recovery programs. In the time period since 2005 the State of Texas has responded to 13 federally declared disasters ranging from hurricanes, flooding, freezes, wildfires, and explosions impacting almost all 254 counties of the State. In 2011, the Texas General Land Office (Land Office) was designated by the Governor of Texas to administer all allocations of CDBG-DR funding. Since being designated as the oversight agency by the Governor, the Land Office has received two additional CDBG-DR allocations for wildfire recovery.

The Disaster Recovery (DR) Program at the Land Office will serve as the writer and principal administrator of the Community Development Block Grant (CDBG) National Disaster Resilience Competition (NDRC) allocation for the State of Texas. In that administration, the Land Office will directly implement some of the proposed activities, while also allocating funds to partner organizations, and entering into subgrantee relationships with local units of general local government in order to reach communities state-wide as effectively and efficiently as possible. The Land office believes this approach is as adaptive as possible to take advantage the strengths of our partners while still ensuring program compliance. The Land Office's DR program is comprised of a staff of just over 60 professionals trained and experienced in CDBG

grant administration and project management in a variety of fields including infrastructure, housing, and economic development. The DR program is often called an agency within an agency because we are all but self contained in our focus. In addition to all the direct CDBG and disaster specific expertise, the DR program includes in-house Accounting & Contracts and Processing & Reporting teams that carry out the financial tasks of the program and ensure related reporting and tracking systems are complete and accurate. This team also works closely with the Land Office Legal Division to manage internal processing of contracts, amendments and work orders. The in-house Quality Assurance team provides monitoring of program activities and oversight of key internal controls to assure compliance to processes, quality in data, and fraud prevention. This team also ensures that program objectives are in compliance with all federal and statutory regulations. Legal support is provided to the Division by four in-house attorneys. Two environmental professionals who are certified to review third-party environmental consultations and resolve any environmental mitigation issues are also on staff. There are a total of six Project Management Professionals (PMP) on staff in the DR Program. In its current programs the Land Office has direct relationships with close to 500 units of local government, advocacy groups, construction contractors, and nonprofit and for profit professional service providers. The Land Office also pays for a staff member at the Texas Historical Commission to expedite historical reviews. Previously, historical reviews took considerable back and forth that often impacted schedules. By obtaining our own staff member, the Land Office proactively addressed this concern. Through this diverse professional staff, and its extensive external working relationships, the Land Office's Disaster Recovery program has the relevant CDBG, project management, quality assurance, financial and procurement, and internal control capacity to quickly launch and implement a variety of major projects.

Beyond the DR staff the Land Office also employs over 500 additional State staff. This staffs manage the State of Texas's state lands and mineral rights and the resulting Texas Permanent School fund valued at over \$36 billion, which is the largest education endowment in the country. The Land Office oversees and regulates for the prevention of oil spills; manages the Texas beaches; and provides 8 Veterans homes with nursing care for over 1,100 Texas Veterans. The Land Office Archives and Records Division is home to more than 35.5 million documents and 45,000 maps, dating back to the year 1650, tracing the history of Texas' public lands. These records are housed in a state-of-the-art archival vault, with pass-card access, constantly monitored temperature and humidity, UV filtered lighting, dedicated HVAC and air cleaning systems, and gas, non-ozone polluting fire control systems to provide the best, safest, most secure environment for the preservation of these historic archival resources for generations to come.

Beyond the CDBG-DR expertise in the Land Office, the State of Texas manages millions of dollars in HUD funded annual allocations from the CDBG, HOME, ESG, and HOPWA.

To enhance delivery of NDRC funds and the implementation of projects across Texas, the Land Office is partnering with a multidisciplinary group that includes other State agencies, institutions of higher education, and other civil society organizations. This group is already quite extensive but as the Land Office progresses with this program we expect the number of partners to increase. A full listing of these partners, their expertise, and their particular contributions to this NDRC project can be found in our partnership documentation. The Land Office plans to gain knowledge from subject matter experts at several different state agencies who have expertise in water resource planning and conservation in light of the ongoing drought and rapid population growth we are currently experiencing. The Texas Department of Public Safety

(TxDPS) Office of Homeland Security through its Texas Infrastructure Security and Resilience Plan provides the strategic blueprint to guide coordinating of efforts among private sector partners and State, regional, local and federal agencies to enhance security and resilience of Texas' critical infrastructure systems from all hazards and threats. Within this plan resilience is brought into all components of operations while identifying dependencies and interdependencies throughout. The Texas Department of Agriculture is another State agency partner that has already been key in the Land Office's outreach efforts and as the agency responsible for the State's CDBG \$65 million annual non-entitlement program and will continue to be a leveraging partner in Phase 2.

Along with the State agency partners, the Land Office is working with Texas A&M University (A&M) and the University of Texas (UT) Center for Space Research and many other education partners fully described in other sections of leverage and soundness of approach. A&M has already provided the Land Office with data identifying at-risk populations for similar disaster events, a broad range of emerging research and technical expertise in the areas of training, response and recovery, and specific fire training services and data. A&M manages 250 Agrilife Extension Service Offices, with one in almost every county of the State. These service centers are being utilized currently to disseminate and gather local information on the NDRC allocation. Texas A&M Engineering Extension Service "(TEEX) training enables communities to be more resilient in times of natural and manmade disasters." Lastly the A&M Forest Service is working with local units of general local government to complete county-wide fire protection plans in consideration of the migration of Texas citizens moving to the wildland-urban interface – a place where subdivisions and businesses meet the surrounding forests and fields. These plans are designed to assess hazards, identify potential risks and set goals for mitigating challenges,

such as problems with topography, water sources and expected fire behavior. The UT system is also a strong partner in their ability to identify areas vulnerable to fire, experiencing drought conditions, and changes in vegetation on an almost daily basis utilizing satellite technology. This data will likely be utilized to prove performance measures as the Texas programs move forward.

A third type of partner the Land Office is collaborating with is being called our Civil Society Organizations. These partners are non-profit and for profit entities that specialize in serving protected classes, organizing community solutions, and outreach. Again by example, with all these organizations named in our partnership documentation, the OneStar Foundation works to connect faith-based and community organizations, businesses, government, and resources to and information in statewide networks. Their vast network has allowed the Land Office to connect with organizations that are not conventionally involved in our normal activities. Immediately following an event, OneStar is responsible for mobilizing Texas' Americorp response and acts as a single point of contact for the nonprofit community available to assist.

As the partner table indicates, the Land Office will be working with a large group of organizations with a wide variety of strengths. The DR program engages on a daily basis with coordinating partners including contractors, funders, subrecipients, community stakeholders, advocates, and other State and Federal agencies. The team assembled to date is very excited about the opportunity presented by the NDRC program and it is unlikely any will fall out; however, should that happen it could be absorbed by the strength in overlapping capabilities between the Land Office and its various partner organizations. The Land Office will also take

ownership of any information that is not readily available online from each partner and has the technical capacity to interpret the information should it become necessary.

The Land Office currently has three major region-wide planning studies totaling over \$10 million in progress that consider coastal resilience, storm suppression techniques, and colonia drainage. As previously mentioned, the DR program has a full time staff devoted to disaster recovery efforts statewide that has already completed thousands of individual projects. That team could easily roll any NDRC funds received into their proven processes and implement multiple programs immediately. The DR program has procured a pool of qualified engineers that are contracted directly to the State for design work associated with every project built by the CDBG-DR program. That design work is then reviewed by an independent firm for reasonableness of design, cost, and necessary time for completion. The DR program further employs a database management system that tracks program compliance and project progress to determine payment eligibility.

In the State of Texas with the Hurricane Ike & Dolly allocation there was considerable interest in fair housing and other civil rights issues. Early in the grant, two fair housing advocacy groups filed complaints with HUD regarding the State program. The resolution of those complaints resulted in a HUD approved Conciliation Agreement. As a result of that Conciliation Agreement, the State of Texas updated its Analysis of Impediments (AI) first for the DR impacted area and subsequently for the remaining areas of the State. The DR program has provided mandatory civil rights, fair housing, and Section 3 compliance training to the over 250 subgrantees on multiple occasions. Those subgrantees considered the AI when developing their programs and have all made local commitments to the State-identified impediments.

Every project funded since the execution of the Conciliation Agreement has undergone a thorough AFFH review. The process has evolved from the State exclusively utilizing external legal counsel for review of complete applications, to a holistic coalition guiding decisions for optimal outcomes. While retaining access to the third-party expert, the State has prioritized building institutional knowledge by acquiring staff educated in civil rights and fair housing law. Furthermore, the primary contact organization for the advocate parties to the Conciliation Agreement now serves in a capacity similar to that of a consultant as opposed to an adversary, and joins as a partner in the Texas NDRC Application. Project reviews are tailored to the particular features of each proposal, whether for housing or infrastructure, and are discussed with concerned stakeholders. In addition to current demographic data and trends, the analysis may include but is not limited to proximity to relevant community amenities, negative area usages, health care access, school quality, transportation options, environmental hazards, other local information, and characteristics of the subgrantee itself. Also, rather than working only reactively in response to applications, the State established a policy of directly providing AFFH assistance to subgrantees upon request, guiding the process for particular projects in advance of application submission. This proactive approach fosters collaboration between the State and local communities along with concerned stakeholders, while diminishing the adversarial feel of a review. These innovations have resulted in significantly greater efficiency and cost-effectiveness for both the State and subgrantees.

In the current DR housing programs the Land Office has implemented requirements for design standards that ensure Housing Quality Standards, International Residential Code, Local Code including flood plain compliance, and standardized construction specifications that consider minimum standards for energy efficiency. All infrastructure projects are designed by

licensed engineers hired by the State and reviewed by a third party engineer. Where opportunities present themselves all projects are hardened for a future event. Homes built by the State with Hurricane Rita funds withstood Hurricane Ike much better than homes in those areas ever did previously. Infrastructure repaired or replaced by those same funds remained operational following subsequent events which allowed residents to shelter in place or return to their homes much earlier. The DR program will implement the same standards on any projects funded by NDRC. To ensure cost reasonableness of housing projects the State requires subgrantees to utilize plan sets that are competitively bid prior to a program beginning. The competitiveness of the State procurement ensures the program gets the best value for its funds. Similarly any nonhousing projects proposed will be required to provide engineering estimates for project costs at application and after an award the subgrantee or partner will be required to use State procurement practices as well.

In preparation for the Phase 1 application for NDRC the Land office has directly contacted all 158 eligible counties¹ and all the communities within those counties. We have held two webinars attended by over 200 individuals each, met one on one with 20 eligible applicants, held 39 meetings with private and higher education partners, and provided countless hours of direct technical assistance on the program. Our program information has been published on the websites of many state wide organizations. We and our State agency partners have strong relationships with all the elected officials in the impacted areas. As the State progresses through the review of the Phase 1 application it is our intent to continue to work with our eligible areas to strengthen their approach to meet their recovery needs. We will also continue to meet with our

¹ Eligible-Counties-Map

partners to explore other ways beyond just the NDRC program we can collaborate in our other programs.

The size of Texas alone requires what would be regional or even multi-state responses in many other states in most every occasion. When Hurricane Ike and Dolly hit Texas in 2008 they impacted an area larger than the northern east coast of the United States. In trying to serve this large of an area one must first consider that the impacts and needs of those involved vary greatly. As an example, Hurricane Ike was a surge, wind, rain, and evacuee issue dependent on what part of the State you were in. To account for this need the State has been very proactive in working directly in all the areas while allowing them to lead their recovery efforts. The Land Office works with regional Councils of Government in all program designs. The NDRC award would be handled in a similar way. The Land Office reached out to all eligible counties and requested details on their remaining unmet needs from the qualifying events. With that information the Land Office is designing three distinct scalable programs that will lead recovery in a resilient fashion while allowing options to be responsive to local needs. This effort will ensure that the overall recovery for the State, regardless of the cause, is cohesive and more beneficial than single uncoordinated projects. As previously mentioned the Land Office with its DR staff, will be the primary responsible entity for the NDRC programs utilizing the expertise of our partners and local agreements where appropriate.

Exhibit D – Factor 2 – Need/Extent of the Problem

The 268,820 square miles of Texas cover a vast variety of climates. In recent years much of the State, from the humid gulf coast to the arid west, has shared in experiencing drought conditions and the related hazard of wildfire. From 2011 to 2013, 156 Texas counties experienced wildfires severe enough to qualify as eligible disasters for the National Disaster Resilience Competition² (Disaster Numbers: 4029 and 1999). McLennan county, particularly the City of West, Texas, experienced a major explosion disaster (Disaster Number: 4136) in 2013 that destroyed water infrastructure and multifamily and primary residence housing for vulnerable populations, all of which had a major affect on the city's economy and population. Likewise, four Texas counties experienced the disaster declaration of flooding and severe storms (Disaster Number: 4136) that exposed the tension between natural resources, land use, urban development, and the effects on vulnerable populations.

BASTROP FIRE

Natural ecosystems throughout Texas have evolved with fire in the landscape. Changing land management practices and expanding urbanization and sprawl – in combination with altering weather patterns – are increasing the probability of fire exposure for homes. From November 2010 through September 2011, more than 3.7 million acres burned across Texas, including more than 135,000 acres during the first week in September alone. All but three of the 254 counties in Texas would report burn bans that month. During the first week of September 2011, Tropical Storm Lee made landfall along the Louisiana coast, causing strong winds to move across Texas. Those winds, combined with record heat, severe drought, low humidity and continued lack of rain sparked numerous wildfires in Texas.

² Texas-Application-NDRC-2015

A variety of efforts are underway across the State to address the needs and the extent of the problem that wildfire presents. These efforts are evidenced through the Texas A&M (TAMU) Forest Service Wildfire Risk Assessment portal (<https://www.texaswildfirerisk.com/>) that deploys risk information and creates awareness about wildfire issues across the state. As stated on this website,

"Wildfire continues to threaten people and property across Texas. Rapid population growth into Wildland Urban Interface areas and an increasing frequency of elevated fire weather conditions represent major concerns moving forward into the future. Heightened awareness of wildfire risk, prevention and mitigation are becoming increasingly important to ensure safety. The Texas Wildfire Risk Assessment Portal provides access to information that describes wildfire risk statewide."

The primary case study for this competition is the Bastrop Complex Wildfire, which ignited on September 4th, 2011, in a small community in the County of Bastrop, Texas. The fire burned rapidly out of control, scorching 32,400 acres and destroying 1,696 residential and commercial structures. A second ignition, the Union Chapel Fire, ignited in Bastrop on September 5th, burning 720 acres and destroying an additional 27 residential and commercial structures for a total loss of 1,723 structures. The fire was not declared extinguished until October 9, 2011. The Bastrop Complex Wildfire is now on record as the most destructive wildland-urban interface wildfire event in Texas history and is recorded as the third largest wildland-urban interface home loss fire to date in the nation with the largest expense per capita loss. This is important due to the amount of financial impact to this small community during the prolonged recovery period.

The fire was located in the area commonly known as the "Lost Pines of Texas". The Lost Pines region has historically been known for timber and forest products and over the last 30 years or so, has become populated with residential neighborhoods and has performed as a local draw for eco-tourism and other recreational visitors. The burn perimeter also encompassed 5,400 acres of the 6,000 acre Bastrop State Park which is a popular destination in the Lost Pines area. Resultant damages from the fire to homes, businesses, and vehicles, whether insured, under-insured or not insured, measures in hundreds of millions of dollars. The costs of insured claims alone paid to date exceed \$250,000,000 according the Texas Department of Insurance records.

In addition to extremely low fuel moisture because of drought conditions, the extraordinary fire activity of the 2011 wildfire was largely due to the proliferation of accumulated undesirable native and non-native vegetation types which formed an understory allowing ground fire to rise or "ladder" into the pine canopy, resulting in severe crown fire activity. The crown fire not only destroyed inhabited structures, outbuildings and vehicles, but created temperatures sufficient to remove essentially all soil based organics in the most severely burned areas. This resulted in significant collateral damage through loss of vegetation resulting in extraordinary erosion and soil destabilization.

Post-fire recovery not only consisted of debris disposal, hazardous tree removal, re-building of homes and reforestation, but considerable stump grinding, erosion control and soil stabilization expenses as well. Since the Bastrop fires, Bastrop County is experiencing flooding in areas that have previously never flooded. Within the 34,000 acres of burn perimeter, there are approximately 84 miles of roads maintained by county forces. Through funding made available by state and federal sources, over \$3,088,081.79 has been spent to date (January, 2015) repairing the erosion collateral damages resulting in a unit cost damage of \$36,763 per road mile. The total

expected unit cost per mile equals \$59,239, meaning that the additional unmet needs costs for final repair and rehabilitation of road surfaces affected by the 2011 wildfires is estimated to be near two million dollars (\$2,000,000).

Intervention to remove ladder fuels will yield positive financial, social, economic, and environmental outcomes when future disastrous fire occurs. In order to avoid or minimize future direct wildfire and collateral losses, Bastrop County has designed a series of projects to mechanically remove or reduce understory vegetation in portions of the pine canopy areas adjacent to the 2011 fire perimeter. Those projects which are anticipated to be completed in 2016 have had funding authorized by FEMA at 75% with local matching of 25%. These projects are designed to remove and treat undesirable understory fuel loading in areas of about 6,267 acres of pine dominated forest. According to the Bastrop County Auditor, there are no available local funds for continued fuels management projects in the remaining acreage of the pine dominated forest beyond those already underway.

Although no funding is available beyond the fuel management project mentioned above, continued intervention in removing or managing such understory from pine ecosystems will result in positive financial, social, economic and environmental benefits and will add to the County's resilience for future wildfire disasters, in turn protecting vulnerable populations in the case of a future disaster. Such action in combination with established best management practices (BMPs) for forest health, both in the burned and non-burned areas, will provide long-term assurance against catastrophic wildfire that impact the inhabited neighborhoods that are and will be intermixed into the forest areas at the wildland-urban interface. A very important function of Bastrop County's overall fuels management program will be providing land stewards with tools,

skills assistance and technical leadership to maintain the safe environment through continued fuel management, prescribed burning, herbicide treatments and other acceptable practices.

The wildfire disaster of 2011 has shown that erosion and soil instability, as collateral damage, yields significant environmental degradation and can expose communities to severe costs for repair and remediation. Target areas have been identified in Bastrop County that have similar soil types and forest fuel loading, which present a potential for wildfire risk if left unabated. There are three project areas where fuel modification projects are currently funded and underway, but there are also two more distinct areas that have been identified where fuels and soil conditions will present a need for further remediation for an additional 141,062 acres of pine-dominated forest with numerous rural dwellings and 192.67 miles of county roads and drainage systems. If future wildfire occurs and the collateral erosion damage repeats, Bastrop's known exposure rated at \$59,239 per mile times the 192.67 miles of vulnerable roads would result in as much as \$11,413,578 of needed repair. This figure does not include potential losses to existing housing or infrastructure and does not consider the stability of any socio-economic effect that a disastrous wildfire will cause.

To date the County has committed to spend in excess of \$5 million dollars in other areas, including the burn zone where pine dominated forest remains vulnerable to fire and erosion in undertaking projects to remove fuel loading, reforestation, revegetation and preparing a county-wide risk assessment and management plan for wildfire prevention and loss control. These expenditures do not include the added value of paid and volunteer staff time, expenses incurred on State owned land and highways, nor the land management efforts by other private and public land stewards. Also, these spent and committed funds take from other county programs and efforts to support the economic revitalization of the immediate area and larger region, as well as

other infrastructure and mitigation opportunity cost that would better protect vulnerable populations in the instance of a future disaster. These funds also do not come anywhere near funding the unmet need in Bastrop County.

WEST EXPLOSION

The City of West, a north central Texas community with a population of fewer than 3,000 people, was devastated in the explosion from a nearby fertilizer plant in April 2013 that killed 14 people and injured 250. Damages have been estimated to be over \$35 million. Properties damaged include: four schools, an apartment complex, a nursing home, numerous houses, and the fertilizer plant. The City's infrastructure, including the water system, sewer system, and roads were severely damaged as well.

The explosion collapsed a water tank and did considerable damage to the pumping facility rendering it unusable. During the course of events leading up to the explosion, the City's only usable Trinity well was out of service due to issues with the submersible well pump. The City of Waco water supply, a neighboring urban center, could not provide adequate quantities of water to effectively fight the fire which, tragically, led to the explosion. The City obtains its potable water supply from both a connection to the City of Waco's potable water system and wells into the Trinity Aquifer. The City of Waco water supply has limited capacity due to the over 15 miles of pipeline connecting the two cities. The City currently has only one usable Trinity Aquifer well in operation, which does not provide enough water for the City.

According to the Mayor of West, Tommy Muska, the following projects do not have sufficient funding to reach fruition: a water well on the north side of the city; a fire building and a fire truck with a ladder; an apartment complex; and a nursing home. The unmet need greatly exceeds the \$400,000 threshold for unmet recovery needs.

The State of Texas has established a partnership with the Texas Department of State Health Services. Through this NDRC capacity building initiative, the State has uncovered further effects from the West Fertilizer Plant explosion relating to disaster behavioral health.

The Disaster Behavioral Health Services (DBHS) Branch, located in the Mental Health and Substance Abuse Division of the Texas Department of State Health Services, is responsible for all-hazards disaster behavioral health planning, response, and recovery operations in support of Emergency Support Function 8 – Health and Medical. In this role, DBHS team members immediately began to coordinate disaster behavioral health services with the Local Mental Health Authority, Heart of Texas Region Mental Health Mental Retardation Center (HOTRMHMR). Response efforts by HOTRMHMR were unprecedented for the community of West with 72 staff responding day and night to provide crisis counseling, stress management and early psychological intervention services. Through these efforts, over 1,000 face-to-face encounters were documented using the crisis counseling program Office of Management and Budget (OMB) Encounter Forms. The significant loss of life, including 12 first responders, put the surviving responders, their families, and the entire community at greater risk for traumatic stress, post-traumatic stress disorder (PTSD), and complicated grief.

Responders are at greater risk for traumatic stress, as well as PTSD, due to several risk factors: repeated exposure to traumatic events, experiencing a high level of physical and psychological hyper-arousal immediately following a traumatic event, having a partner or peer killed or seriously injured in the line of duty, being at risk for losing their own life, witnessing traumatic images, and responding to a call where it is known the victim is a responder (traumacenter.org/resources/pdf_files/First_Responders.pdf).

According to data gathered by disaster behavioral health counselors, first responders to West, Texas experienced all of the above putting them at greater risk for stress reactions and future emotional, physical and behavioral problems. Furthermore, the residents of West are at risk for survivor's guilt and complicated grief which is more likely to occur after a death that is traumatic, premature, sudden, violent, or unexpected (health.harvard.edu/fhg/updates/Complicated-grief.shtml).

It is through these efforts and new data on the need and the extent of the problem that the State of Texas will work to address the unmet needs of vulnerable populations at risk of future disaster in the City of West and the larger region.

TRAVIS FLOOD

On October 31, 2013, a predominately low-to-moderate income (LMI) residential area in Austin, Texas, located in the Onion Creek watershed and comprised, mostly, of single family homes experienced major flooding³. The event resulted in substantial damage to homes and other personal property. This became the “flood of record” for Onion Creek and was estimated as a 170-year storm event for the Onion Creek watershed. Locally it is known as the Halloween Flood of 2013. The impacted area, or the focus area, is referred to as lower Onion Creek.

Over the years, the City of Austin (COA) has made substantial effort to return the area to its natural floodplain. In 1999, the COA partnered with the U.S. Army Corp of Engineers (the “Corps”), the Lower Colorado River Authority (LCRA), Travis County, and the City of Sunset Valley to find solutions to flooding.

By the time of the October 2013 Flood, the COA had purchased 323 homes and had begun to relocate occupants in lower Onion Creek. The 323 homes were located in what was

³ Travis-County-Target-Area-Map

referred to as the “Corps” project area for lower Onion Creek. Buying out homes located here greatly reduced the number of properties and people potentially at risk during future storm events, including the October 2013 flood.

In December 2013 and in response to the October 2013 flood, both the COA and Travis County became part of the President’s national disaster declaration for public assistance for lower Onion Creek. Identified were a number of homes (approximately 482) located in the 100 and 25 year floodplain. These homes have yet to be included in the COA’s buyout and relocation plan due to limited funds. The number of homes damaged (482) in lower Onion creek exceeds the NDRC application requirement for 100 damaged homes.

The data supports the concentration of housing damaged in the sub-county focus area. More than 50% of the population served by the COA's Watershed Protection Department’s (WPD) lower Onion Creek buyout and relocation program is within the low-to-moderate (LMI) income category.

The data shows a population of LMI minority residents with limited financial resources that are predominantly employed in the service and trade industries. Both of which are known for their cyclical nature and lower working wage.

The lower wage often forces families to seek less expensive housing. With the rapidly increasing cost of housing and property taxes in Austin and with a population forecasted to double in the next 20 years, affordable housing has become a scarce resource in Austin’s central core and surrounding area. Although the homes may be less expensive outside of Austin, they are beyond the area where many jobs are located. This creates a longer commute time and less time for family needs and responsibilities. This may be one of the reasons the community is close-knit. They depend on each other to help offset time lost commuting and working. During

the aftermath of the October 2013 flood, the community cohesion was again demonstrated by their own creation of a disaster response group known as Travis Austin Disaster Group (TARG), which took on an advocacy role for the people who lost homes and property during the flood.

COA has provided proof that a number of the residents remain displaced and/or are at various stages of home repair, elevating their home, or waiting to participate in the buyout and relocation program. There is also a lack of affordable housing options nearby. The COA seeks to work with partners to collaboratively determine housing solutions that will provide decent, safe and sanitary housing, outside the flood hazard area, for the lower Onion Creek community. Since 1999 the City of Austin's (COA) Watershed Protection Department (WPD) has been working with the U.S. Army Corps of Engineers to relocate residents from this recently realigned floodplain area. Many homes have been demolished to date, but with the immediate devastation from recent flooding, COA and Travis County lack the funding to complete the relocation project.

It is important to note that many of the homes in this area were built in the 1980s and before the current floodplain regulations. Of concern to the COA and WPD, is the increasing number of high intensity rain events in this part of Austin. By buying out and demolishing many of the damaged homes, the COA can return this area to its natural floodplain, save lives and property, and reduce future costs of saving lives and rebuilding homes.

Other Eligible Texas Counties that have identified target areas:

While we chose to highlight 3 main target areas for purposed of the Phase 1 application, there are a number of other areas within the 158 eligible counties where we intend to pursue resiliency projects. Below is a summary of their needs categorized by the types of conditions they fall under. We hope to implement solutions tailored to these varying needs.

Rural-Dry & Suburban-Dry: Consists of approximately XXXX counties that were primarily hit with wildfires in 2011. These counties had experienced Exceptional Drought for the period prior to the wildfires and are still under drought conditions as defined by the US Department of Agriculture and the Texas Governors Office.

Rural-Forest & Suburban Forest (Wildland-Urban Interface): Consists of approximately X counties in Texas, primarily hit by wildfires 2011, but also experiencing flooding due to severe storms. These counties also experienced Exceptional Drought for the period prior to the wildfires and are still under varying levels of drought conditions. Many of these rural-forest counties have experienced environmental degradation due to the extreme nature of the 2011 fires and have not been able to recover due to the environmental distress caused by the continued drought conditions following the 2011 wildfires. Certain rural-forest and wildland-urban interface counties have taken steps to develop County Wildfire Protection Plans (CWPPs).

Exhibit E – Factor 3 – Soundness of Approach

The sheer size of Texas requires that state disaster recovery planning include substantial cross-jurisdictional cooperation. The tremendous range of issues that can arise as a result of any given disaster are best addressed by cross-disciplinary thinking. By fostering a holistic approach, incorporating public-private partnerships and recognizing strengths and interdependencies, the state NDRC team addresses both the physical and intangible needs of the most vulnerable residents. The resulting concepts and ideas lead to a direction-setting framework for disaster recovery that will harness the diverse resources of the state in tandem with the Texas culture of self-reliance, creating communities that are economically and socially more resilient.

The Texas NDRC Application engages private sector entities, non-profit organizations, institutes of higher education, volunteer organizations and government from the local to state level. The State outreach strategy began with utilizing existing networks of state and local contacts and then developed an extensive list of communications partners that could be engaged to inform all levels of stakeholders. The Texas NDRC Application worked with the Texas Department of Homeland to coordinate and execute a variety of presentations and conference calls in order to capture all levels of stakeholder. More than 80 consultations were made over a 10 week period to stakeholders from all sectors, and sections, of Texas (See Appendix I).

In addition to the distribution of information through a designated website, presentations, and regular email updates to a network of over 500 Texas NDRC registrants and multiple association groups, two live webinars were conducted with participation from local governments and stakeholders across the state. Initial discussions with counterparts across agencies evolved organically into second- and third- degree connections to stakeholders, experts, and key resources. For example, collaboration with the Department of State Health Services (DSHS) staff

led to connection with the 2-1-1 human services information network and potential leveraging of capacity therein. In addition, DSHS staff is sharing NDRC information with an interagency workgroup to include those providing disabled and aged population services, among others. Contributions to the NDRC application from member organizations of the Texas Water Infrastructure Coordinating Committee (TWICC) stemmed from a presentation at a single meeting. Through partnership with TWICC, the State identified critical water infrastructure statewide, while capturing existing efforts at the local level. This approach of expanding contributions of expertise and capacity is being replicated with other entities on an ongoing basis.

To ensure that the needs of the most vulnerable Texans are emphasized, the State engaged in early discussions with organizations dedicated to representing such residents, gaining insight as to the highest priorities. For example, in conjunction with the Disaster Behavioral Health Consortium, the State developed objectives and strategies for assisting impacted residents in need of related mental health and human services. The Texas Application also engaged local communities and volunteer organizations through a grass-roots approach by working with their partner organization, OneStar Foundation. Through this partnership the State of Texas has been able to engage Texas Volunteer Organizations Active in Disasters (VOADs) as well as with philanthropic organizations like the Texas Meadows Foundation (<http://mfi.org/>).

Capitalizing on an existing relationship with the non-profit advocacy organization Texas Appleseed, the State is framing the issues from the perspective of low-income minority residents who may lack transportation or insurance. As noted in the ideas and concepts discussed below, brainstorming sessions reveal issues of concern for unique populations with differing needs, including potential cumulative risks of vulnerabilities, both during and after a disaster.

Teamwork will continue throughout the subsequent phases of the NDRC, including more outreach directly to at-risk residents, and collaborative design of solutions.

In sum, this cross-disciplinary, cooperative approach captures a range of capacities across Texas stakeholders and brings to light previously unidentified impacts and opportunities, in turn institutionalizing resilient programs and innovative thinking.

Ideas and Concepts

The Texas General Land Office (Land Office) and its partners will use technology and innovative thinking to build on and influence the physical embodiment of resilience while also providing programs that prop up the social component of resilient communities. This will be accomplished through a multi-scaled approach that starts with the individual. These ideas and concepts will maintain the Texas spirit of self-reliance through programs that help individuals' bounce back from disasters more quickly, thereby allowing them to contribute to and assist their communities during all stages of disaster. The NDRC goals will be further supported through innovative educational programs, economic revitalization, infrastructure design, and operationalize technology and in turn leverage resiliency within physical development of structures and communities. These ideas and concepts harness the Texas essence of independence and build on a rich history of resilient and regional systems thinking.

The Texas Disaster Resilience Information System

In the aftermath of the worst Hurricane event in U.S. history in terms of dollar losses, FEMA called on all communities to learn from disaster and to "build back safer." The State of Texas is committed to helping its communities become far more disaster resilient and proposes to establish the Texas Disaster Resilience Information System as a component of its CDBG disaster resilient recovery planning and projects. This program will build on pre-existing

innovations, including Texas' statewide 2-1-1 disaster assistance support call system, the Texas Extension Disaster Education Network (EDEN), and the creation of a disaster resilient Texas scenario planning system (that builds on the 2011 -2013 US HUD sustainable community scenario planning project in Central Texas).

The Land Office proposes to establish a state disaster resiliency council that will draw its membership from state, regional and local government, nonprofit and private entities that work in disaster response, recovery and mitigation planning. The Council will suggest ways to improve disaster resilience from an all hazards perspective, and to create a centralized clearinghouse and assistance system for Texas cities to evaluate pre- and post-disaster mitigation and recovery planning. The Land Office, in partnership with the University of Texas, will create prototype disaster resilient scenario planning models that enable cities and counties to explore alternate land development scenarios both pre- and post-disaster, so communities can better understand the social, economic and environmental tradeoffs of structural and non-structural mitigation choices.

Cities will be able to explore, for example, the costs and benefits not just in dollar terms but also in terms of whether proposed actions improve or aggravate pre-existing environmental or social injustice (perhaps through loss or gain of suitable affordable housing), whether it supports a more diverse and disaster resilient economy or less so, and whether proposed scenarios are more or less disaster resilient to loss of life and property by importing scenarios into FEMA's HAZUS software so that future land use scenarios can be subjected to simulated flood and hurricane storm events. This modeling capability will enable communities to better understand whether they are becoming more or less sustainable and disaster resilient as the models allow consideration of over 40 sustainability indicators. The models will not only be

useful for Texas communities, but will be created in prototype forms that can be easily exported to any place in the country facing similar natural hazards.

Regional/Statewide Wildfire Approach

In order to ensure that ideas and concepts developed through work with the Bastrop target areas, the Texas NDRC is working to ensure that efforts have multi, or co-benefits that are transferable to other regions and parts of the State. Through this process, the ideas and concepts will not only be replicable and enhanced across the multitude of other target areas, but can be seen as a model to areas with similar hazards or threats related to wildfire.

One approach is to leverage existing resources and partnership to develop wildfire protection plans that build off of local context and precedent while enhancing existing partnership and efforts already underway in local communities. Communities will coordinate with Travis County/City of Austin on their development of a County Wildfire Protection Plan CWPP via the support of the Fire Adapted Communities Network (<http://www.fireadapted.org/region/fac-learning-network.aspx>). Using this replicable model designed by the Austin Travis County Wildfire Collaborative (<https://www.austintexas.gov/wildfireprotectionplan>), Bastrop and other counties across the state can work to develop context specific CWPP's that will address regional resilience while also taking into consideration the dependencies and interdependencies and the vulnerable populations that would benefit from such efforts.

Through the extensive partnerships developed out of the Texas NDRC approach, Texas will convene its research and educational institutions to coordinate the development of an innovative statewide model that overlays drought and soil moisture data with Normalized Difference Vegetation Index data to create a composite map that identifies in daily intervals the

current and future risk factor of, not only wildfire conditions, but also drought and regional water availability. Texas will also look to other national efforts to inform their disaster resilience effort; such as WIFIRE, which is a National Science Foundation funded project to develop a scalable data-driven monitoring, dynamic prediction and resilience cyber infrastructure for wildfires (<http://wifire.ucsd.edu/>).

Other ideas and concepts relate to working with the Texas A&M Forest Service and their extension services across the State to implement localized incentive programs to get home and businesses owners to harden their structures and work to integrate USAA insurance cost benefit initiatives. Other concepts are to integrate ISO Insurance rating system and other Public Protection Classifications (<https://www.tdi.state.tx.us/fire/fmppcfaq.html>) for communities working to battle wildfires. All of these concepts build off infrastructure and other localized efforts to physically manifest resilient ideas, such as: master isolation valves in new housing and rental developments; cement culverts that can withstand the wildfire heat and the weight of fire trucks; and a variety of other ideas and concepts that have been brought forth in target areas across Texas.

For Bastrop County, we will develop a fuel management program in partnership with the Texas Forest Service. Bastrop County remains aware that continued intervention in removing or managing understory from unburned pine ecosystems will result in positive financial, social, economic and environmental benefits and will add to the County's resilience for future wildfire disasters. Such action in combination with established best management practices (BMPs) for forest health, both in the burned and non-burned areas will provide long-term assurance against catastrophic wildfire that impact the inhabited neighborhoods that are and will be intermixed into the forest areas known as the urban-wildland interface. One specific concept within that program

is training and implementation of fuel management of grassland and forest areas. This includes revegetation after long periods of drought or after disasters, which not only replenishes the natural environment from the disaster, but it has the additional benefits of reducing future threats, economic opportunities from agricultural uses, recreational uses, reducing runoff and erosion, and providing a habitat for wildlife. Any other program techniques and materials developed can also be incorporated in other places through some of the State's planning and training mentioned in our long-term commitment section and capacity narrative. A very important function of the County's overall fuels management program will be providing land stewards with tools, skills assistance and technical leadership to maintain a safe environment through continued fuel management, prescribed burning, herbicide treatments and other acceptable practices.

City of West (McLennan County) - Explosion

For the target area of West, Texas, in McLennan County we intend to address the unmet recovery needs of elderly, low income individuals, as well as other vulnerable populations through housing and rental development activities. This will naturally involve engaging the private sector in the area for standard developments. However, if the State of Texas receives funding through NDRC to rebuild a nursing home that was destroyed by the explosion and subsequent fire, and bring back the affordable rental stock in the area, the State will coordinate with local partners on the ground who have been engaged with the mayor's office and surrounding community to ensure that NDRC funds are expended in a manner that addresses not only the future risk, but also multi-hazard scenarios.

As noted in the Exhibit B breakdown for the City of West, and in the subsequent supporting documentation, there are a variety of other infrastructure developments that will be funded through the NDRC program. These developments will capitalize on past planning and

resilience efforts and well as innovative and new approaches to ensure the incorporation of best management practices that will educate and inform the public and other vulnerable populations of resilience efforts taking place in the community. In recognizing that redevelopment projects are a complex and dynamic processes with many different stakeholders requiring different levels of participation and communication, the State of Texas is leveraging the services of their partner organizations, the GoCollaborative and many others, to ensure that stakeholder-driven process is put in place.

In an the effort to develop a comprehensive and innovative concept and idea that that will address regional resilience and the interdependencies of not only critical lifeline infrastructure, but also economic revitalization and community development, the City of West target area has designed an approach that has a positive multiplier effect that can be transferable to other regions and parts of the state, and even the nation.

The Disaster Behavioral Health Consortium (DBH) functions as a planning and information sharing body that enhances the Texas Department of State Health Services' Incident Command System to facilitate communication between response agencies during state and federal disasters or critical incidents, provide advice to the State Disaster Behavioral Health Services branch regarding best practices in early psychological interventions to victims of crime, review and assess the need for a credentialing system for DBH responders, assist Disaster Behavioral Health Services to integrate DBH into the Incident Command System, serve as the catalyst for developing similar consortia at the local/regional levels and facilitate collaborative efforts that could potentially secure funding for training, capacity building, response, and recovery projects.

Along side the DBH, the City of West incident has brought to light another idea and concept relating to the unmet needs of vulnerable populations, not only locally, but across the State. Currently, Texas disaster management regards 2-1-1 as a communication hub to monitor in real-time UNMET non-emergency needs during disasters. NDRC funding could help to develop ability in real-time to visualize 2-1-1 data for mapping and graphing unmet needs over time and location in order to focus resources in high-risk areas of vulnerable populations. Further, this ability to monitor unmet needs could be merged with Web-Base Emergency Operation Center (WebEOC) capabilities for determining management of resources for disasters. The existing Texas accredited call centers with certified professional staff could be used to contract with FEMA and/or other disaster-related organizations for conducting intake interviews with adaptations to the database to directly feed into FEMA's database. Further, disaster victims could easily contact 2-1-1 services throughout the U.S. for ongoing follow-up during recovery.

Flood Resilient Concepts

The 2013 floods across the Travis County area did considerable damage, but that is a hazard not unique to that area. The current concepts and ideas set forth by the City of Austin Watershed Protection Department of home buyout and relocation through a master community redevelopment plan can be replicated across target areas and counties in Texas at risk of severe storm and flooding. Austin and Travis County have been proactive by relocating residents from the target area prior to the disaster, knowing there was the potential for damage to this vulnerable population. The COA is adjusting to the natural resource environment and its changing environmental and structural circumstances through policy and incentives programs for residents in vulnerable situations. They are buying homes in the target area in order to return this area to its natural state, and thus minimize risk to citizens and the environment. The ability to live in

harmony with nature takes foresight because developing innovative solutions that are resilient with long-term benefits takes much critical analysis and planning.

The Texas Application for the NDRC will take into account flood resilience technologies that enhance structures and infrastructure at the level of buildings, neighborhoods, and larger regions (<http://tech.floodresilience.eu/>). Funding through the NDRC program will also allow for the activation of leverage in flood mitigation planning currently taking place across Texas where communities are required to put forth matching funds where no funds are available. In an effort to address future flooding risks across Texas, the NDRC process will allow for a forum to discuss, and implement, the expansion of the National Flood Insurance Program (<https://www.fema.gov/national-flood-insurance-program>) to rural and other vulnerable communities across Texas.

As described in the Capacity narrative, the State's disaster response has evolved from simply rebuilding, to rebuilding with the future in mind. Homes are built to standards such that they can withstand future storms, are accessible or adaptable for the disabled and are, when appropriate, relocated to areas of decreased risk for greatest storm impact and of increased opportunity for vulnerable populations. The State is now building on past success and expanding into addressing needs beyond physical reconstruction. The new concepts and ideas developed for the Texas application will allow us to continue and expand these efforts.

Exhibit F – Factor 4 - Leverage and Outcomes

Outcomes

As with any disaster, the impact can be bad, but in an already vulnerable location the shock of a disaster can be catastrophic to a community's recovery. The Texas NDRC Program will develop more programs and solutions that can be replicated across the state, and reduce the stress of a hazard. The programs we have planned are intended to be a new way of thinking that lasts, and not just for the life of a building or the aid to one family.

Our solutions are based around four key concepts. Conserve, Plan, Assist, and Develop. All the target areas identified within Bastrop County, Travis County, and McLennan County (City of West) were previously designated as presidentially declared disasters. The resiliency initiatives taken in these areas to address their respective hazards (wildfire, flood, and explosion) will serve as archetypes of what solutions could be implemented to address the following:

- To apply science-based and forward-looking risk analysis to address recovery, resilience, and revitalization needs.
- To leave a legacy of institutionalizing the implementation of thoughtful, innovative, and resilient approaches to addressing future risks.
- To provide resources to help communities plan and implement disaster recovery in a way that makes them more resilient to future threats while improving quality of life and making communities more resilient to economic stresses or other shocks.
- To fully engage stakeholders about pathways to resilience based on sound science.
- To leverage investments from the philanthropic community to help communities define problems, set goals, explore options, and craft solutions that extend beyond the target areas of the NDRC.

As part of our conservation efforts, we intend to develop a fire management program in coordination with our target area communities, as well as the Texas Forest Service, Texas A&M University and others. One specific concept within that program is training and implementation of fuel management of grassland and forest areas. This includes revegetation after long periods of drought or after disasters, which not only replenishes the natural environment from the disaster, but it has the additional benefits of reducing future threats, economic opportunities from agricultural uses, recreational uses, reducing runoff and erosion, and providing a habitat for wildlife. Any other program techniques and materials developed can also be incorporated in other places through some of the State's planning and training mentioned in our long-term commitment section and capacity narrative. By sharing the information, our solution is financially sustainable for other communities who now would not have to spend resources to plan themselves, which in turn is another benefit because it incentivizes communities to integrate our resiliency resources instead of less innovative or less beneficial solutions.

As part of our planning component, the Regional Disaster Resilience Action Plan (RDRAP) program will help build bridges across communities, and integrate and institutionalize resiliency planning. The resulting RDRAP should produce a multitude of benefits helpful in not only the past disasters, but future hazards. The plans will be helpful in: identification and prioritization of critical assets, vulnerabilities and preparedness gaps; assessments of potential and cascading impacts; impediments to response and recovery; development of necessary expertise; incorporation of performance metrics; and ensuring the confidentiality of proprietary information and sensitive data.

Many of these solutions offer the opportunity to assist vulnerable populations after their implementation, but also during design and construction. As part of our regular CDBG

activities, we strive to bring Section 3 businesses into the communities. In fact, we developed a toolkit to assist communities to engage Section 3 businesses, and a Compliance Assessment Points System to ensure we are actively monitoring Section 3 activities in our program. This has resulted in communities using these tools with other bid opportunities beyond just our CDBG program, and we intend to employ those techniques and tools here. Our compliance tool will allow us to continue evaluating our success in engaging those populations as a regular course of business.

Other evaluation factors will include certificates of construction completion and expenditure of funds as measurable signs of the NDRC funds being fully utilized; however, success for us must include lasting and replicable improvements. By engaging tools available from some of our partners, we not only can tap into a multitude of evaluation tools, but we continue to create a cross-disciplinary system of awareness for resiliency. For example, Texas' 2-1-1 human services telephone information line network analyses individual calls received by zip code, many of whom are part of our most vulnerable populations, and can be used to identify outstanding needs, or hopefully indicate successes if some of those needs are no longer existent or as severe. We hope to develop quarterly reports from this data for analysis.

These are just some of the many examples of how we intend to measure the ongoing resiliency activity that will not only make our communities prepared and responsive to hazards, but will also make them sustainable for a developing and changing world. Successful resiliency includes the ability to withstand hazards and reduce impacts, by replicating resilient measures within our target areas and everywhere across the State.

Leverage

The Texas NDRC application plans to propose a series of projects in Phase 2 that support the broad, diverse concepts for resiliency. As we strive to integrate our different solutions into the community, we are bringing together a wide range of partners - from government, advocacy groups, nonprofits, and private sector - to continue a legacy of building back better. Most importantly, we are developing proposals that can be replicated in other areas, and leverage a variety of resources.

As we uncovered the unmet needs in our disaster areas, we did extensive outreach in order to identify solutions that would benefit the target area, and beyond. We met with several state agencies to determine if we might be able to leverage any other funding for projects in Phase 2. From that, we have been able to identify a few options. In 2013, the Texas Legislature appropriated \$2 billion of state funding to ensure the conservation and responsible development of water for Texas. This combined with another state initiative that can issue up to \$6 billion in revenue bonds, will generate ongoing funding through leveraged securities for critical water supply needs. Through this and other efforts, the State has demonstrated a commitment to conserve and plan for our water, and subsequent hazard, needs.

Another agency we have been able to leverage is the Disaster Behavioral Health Services (DBHS) Branch, located in the Mental Health and Substance Abuse Division of the Texas Department of State Health Services. DBHS is responsible for all-hazards disaster behavioral health planning, response, and recovery operations in support of Emergency Support Function 8 – Health and Medical. Their work and data has been extremely helpful in identifying some additional unmet needs. And we plan to leverage this group as we solidify our Phase 2 proposals, and incorporate their mental health planning as we assist our target areas.

In January 2015, Pecan Street was awarded a \$4M grant from the State of Texas Emerging Technology Fund to conduct a 5-year study on residential water management. As a member of the project team, Pecan Street will dedicate their resources to provide consulting services to target areas on opportunities to increase the resilience of regional energy and water systems by focusing on opportunities to utilize new technologies at the residential level that result in increased grid stability and improved water resource availability. Pecan Street can also analyze risks to utility infrastructure from flooding, wildfires and other natural disasters, and opportunities to decentralize those resources to reduce the community impact in the event that a centralized component of the grid is damaged. This will be a huge asset to our community planning approach in our target areas.

Additionally, in partnership with the University of Texas, Center for Sustainable Development within the School of Architecture, we will leverage a HUD \$3.2 million Sustainable Places Project investment. This project will create demonstration projects in our target areas that provide community documentation on vulnerability assessments and scenario planning for disaster resilience and sustainability approaches. And, it will create prototype GIS data base files and crosswalks between scenario planning and HAZUS software systems for use by other Texas cities and nationally.

All of our target areas have also received funding from multiple sources that have helped bring them to their current state, and will assist with future planning. All of the areas have active local, nonprofit groups that will assist with planning and contribute resources to the various programs. Texans, like many Americans, help their neighbors. That kind of support is a large contributing factor to resiliency.

As previously pointed out, we recognize the NDRC is seed money and our commitment to seeing these resiliency initiatives through will be as a result of many sources of resources.

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Exhibit G – Factor 5 - Regional Coordination & Long Term Commitment

Texas has made a number of improvements focused on resiliency, and raises the standard to improve the sustainability of our communities. Below is a sampling of programs and plans designed to continue our forward commitment.

Hazard Assessments and Continuity of Operations

We are becoming more aware of the need to think in a resilient manner given the previous wildfires, explosions, floods, droughts, and hurricanes that have impacted the State of Texas. This awareness is expanded by the Texas Threat and Hazard Identification Risk Assessment (THIRA). This includes institutionalizing solutions with comprehensive plans and knowledge transfers. An example of this is our Continuity of Operations Initiative. This initiative focused efforts to increase the resilience of its state agencies through the creation of agency Continuity of Operations Plans (COOP), and conducting continuity exercises. Through this initiative, the Texas Office of Homeland Security established Texas Essential Functions and developed a Continuity Planning Crosswalk integrating relevant State Laws related to continuity planning, the FEMA Continuity Assistance Tool, and the Emergency Management Assessment Program requirements. In 2014, Continuity of Operations Plans from 106 state agencies were submitted to the State Office of Risk Management (SORM). Currently, SORM is conducting an evaluation of state agency COOP plans and providing written feedback to each agency with recommended improvements. SORM will provide a written report to the Texas State Legislature in 2015 listing state agencies in compliance with state continuity policies and noting those that failed to comply. We took this initiative a step further by developing a Milestone List for continuity planning processes linked relevant FEMA resources; development of a template for Memorandum of Agreement for use of Alternate Facility; creation of a Synchronization Matrix

for Continuity Incidents; creation of a Texas Facilities Commission web portal to provide information on buildings and offices available as continuity facilities; and the development of example continuity exercise objectives and baseline continuity Exercise Evaluation Guides (EEGs) for both discussion and operations-based exercises. These best practices have been posted on the SORM web site (www.sorm.state.tx.us) for use by state agencies and other regional and local government entities.

We also recently published the Texas Critical Infrastructure Security and Resiliency Plan (TISR); this is a multi-year strategy and program management blueprint developed to establish a state-wide Critical Infrastructure Security and Resiliency Program; enhance and facilitate private-public sector coordination; and to effectively oversee and assess the status of CISR capabilities and initiatives.

Regional Disaster Resilience Action Plans

The previous examples show that we have and are continuing to coordinate cross-functionally to develop cohesive solutions and share information to execute effectively. Localities and the State are looking internally at personnel who have similar functions, but can be utilized to address and/or mitigate hazards. Examples of this include a future initiative known as “Regional Disaster Resilience Action Plans” (RDRAP). These plans will be led by the 24 Councils of Government (COGs) and 5 Urban Area Security Initiative (UASI) cities in Texas. The outcome of these RDRAPs is to identify and prioritize critical assets, vulnerabilities and preparedness gaps; assessment of potential and cascading impacts; identify impediments to response and recovery; development of necessary expertise; incorporation of performance metrics; all while ensuring the confidentiality of proprietary information and sensitive data.

Identifying Threats, Hazards: The Resilience Implementation Process

In June 2014, the Texas Office of Homeland Security and the City of Austin partnered with the Department of Homeland Security to operationalize the Resilience Implementation Process, a concept developed by Johns Hopkins University's Applied Physics Laboratory.

The purpose of this pilot program was to implement the Resilience Implementation Process to establish a cyclical cornerstone critical infrastructure exercise program in Texas to attain greater understanding of dependencies, interdependencies, cascading effects, and points of vulnerability resulting in an action plan to increase resilience in a defined geographical region.

The City of Austin and surrounding Travis County is the defined geographical region being used in the pilot. Its focus is on lifeline infrastructure sectors (water/wastewater, energy, communications, and transportation) as well as emergency services, information technology healthcare and public health, and critical manufacturing.

The results of the regional interdependency workshop will be used to construct a capabilities-based risk map that portrays the geographic, intermodal, and critical infrastructure connections of the area. The risk map is being created to develop a comprehensive understanding of the risk faced and possible consequences. By risk mapping the specified geographical area, the region can identify those independent variables that enable functional resilience in land, air, water and cyber domains. It serves as a catalogue and inventory of interconnected elements in the identified region and cross-links them to the functions and capabilities necessary to sustain essential services.

Following creation of the risk map, the region will conduct a Capabilities Analysis Exercise (CALEX) on May 20, 2015. The CALEX is a table-top exercise designed to help participants better understand the resulting impacts of a selected "stressor" on infrastructure

systems and the region's population. The "stressor" used is a terrorist incident or disaster scenario taken from the region's Threat and Hazard Identification Risk Assessment (THIRA). Using this scenario, the CALEX will integrate principles of functional resilience with the findings and analysis of the previously conducted Regional Workshops involving both private and public sector entities. The CALEX is designed to enable stakeholders to "drill down" on priority challenges posed by infrastructure dependencies. Participants include infrastructure operators, security experts, protection and resilience thought leaders, corporate executives and senior policy makers at regional and state levels.

The ability to adapt and overcome has been and will continue to be the State's perspective to address challenges and have the foresight to develop innovative solutions that are resilient with long-term benefits.